

FIG. 1



REPLACEMENT DRAWING

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FIG. 2

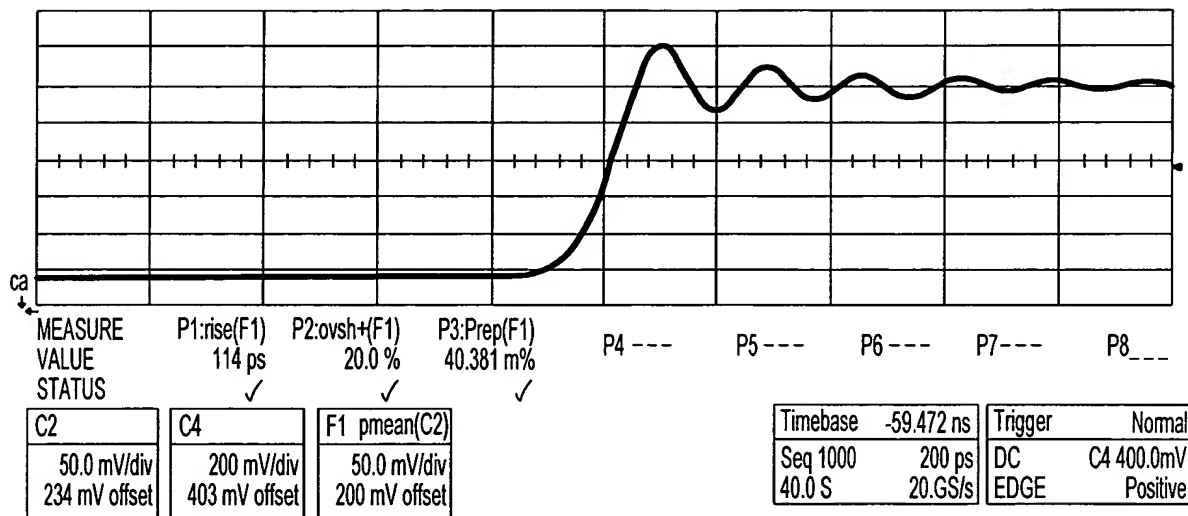


FIG. 3

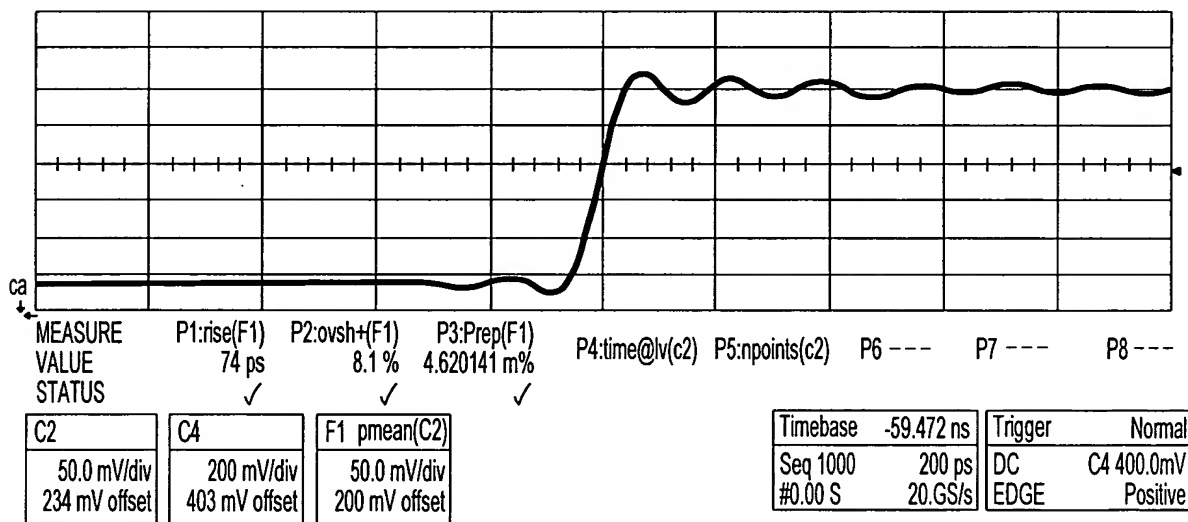


FIG. 4

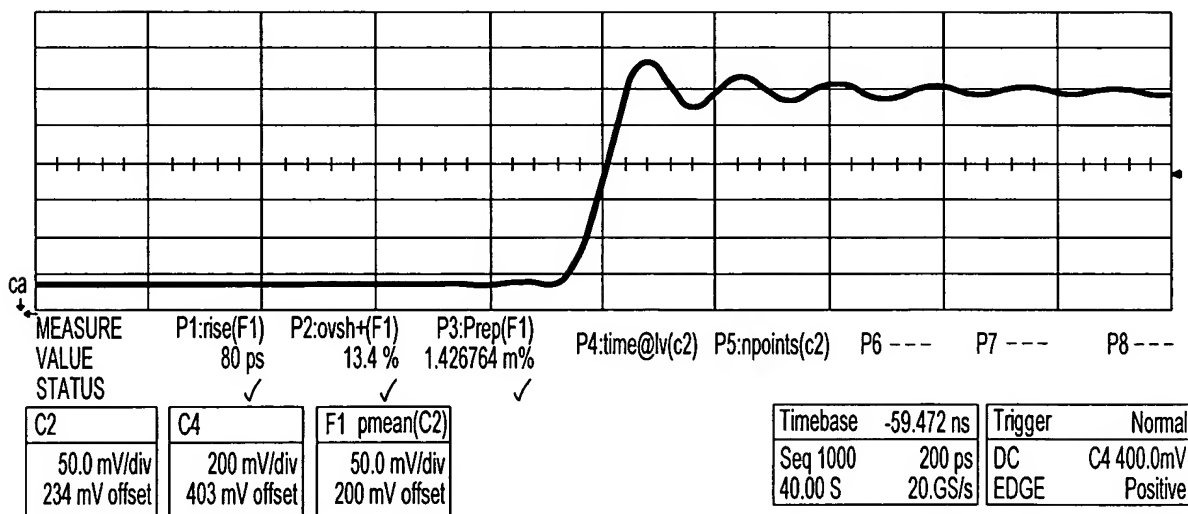


FIG. 5

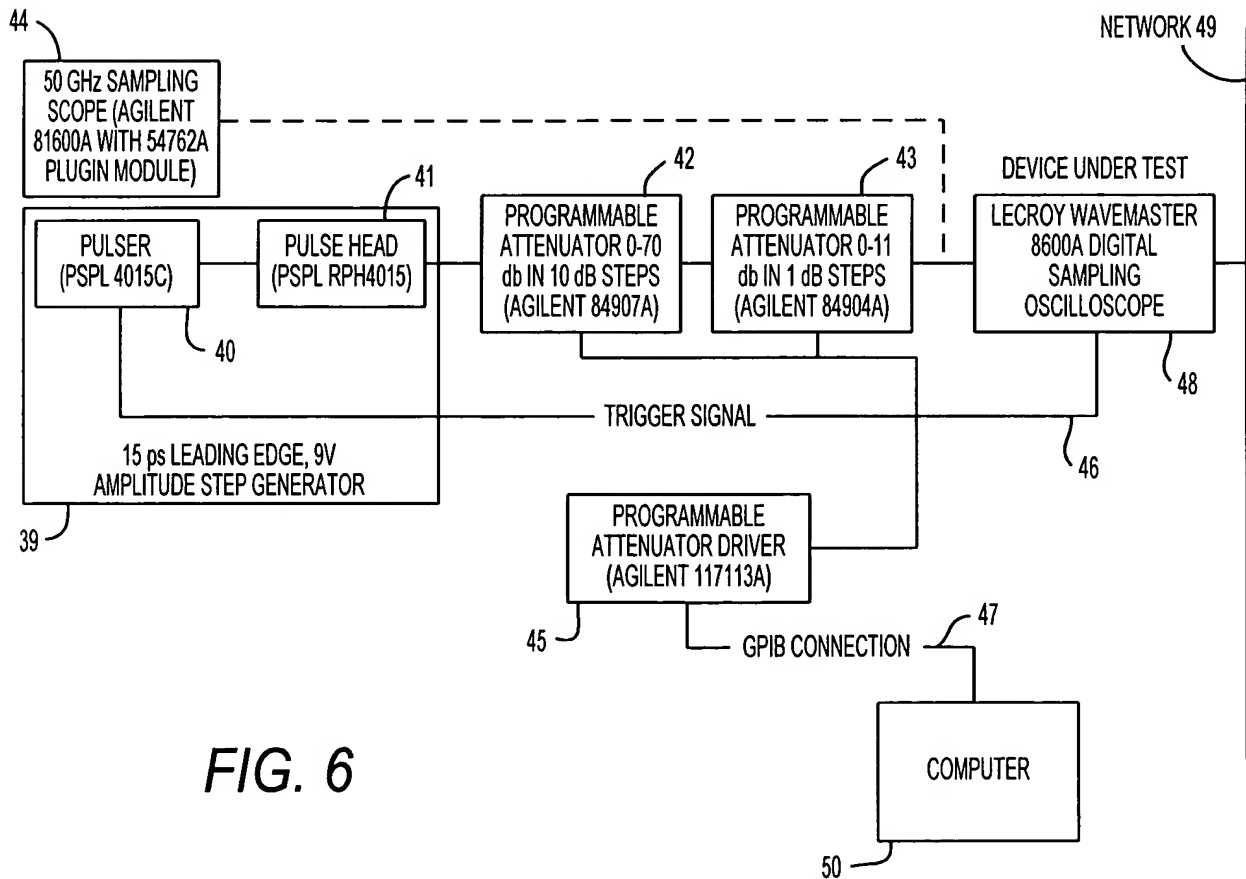
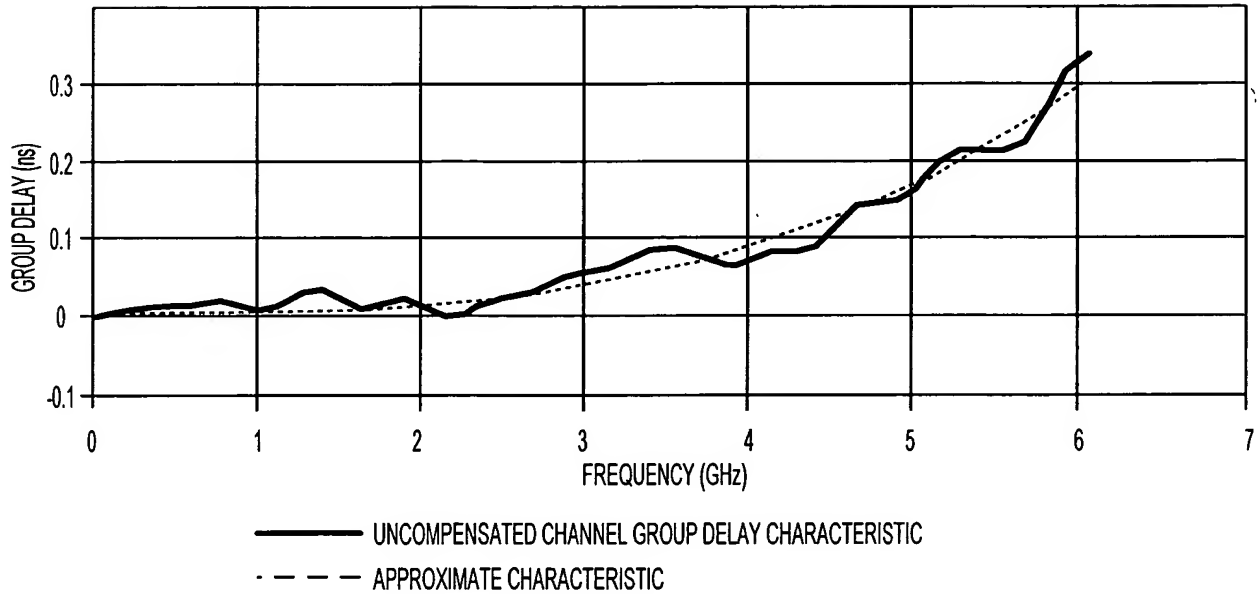


FIG. 6

FIG. 7

DIALOG

RESPONSE ADVANCE GROUPDELA... GROUPDELAYO... SELFTEST

GROUP DELAY COMPENSATION

ALLOWED ☒

ENABLE ☒

VERNIER 1.00

VERNIER IN USE 720e-3

FREQUENCY POINTS 50

MAX FREQUENCY 6.3

MAX PHASE DELTA 30

TRY HARD TO FIT COMPENSATOR ☐

DEGREE OF COMPENSATION 3

TOLERANCE (ns) 0e-6

MAX ITERATIONS ALLOWED 30

MAXIMUM DELAY 1.0

ALPHA 1.5

APPROXIMATE ☒

AUTO DETERMINE POWER ☐

APPROXIMATE POWER 3.0

APPROXIMATE POWER IN USE 3.000000

EVALUATION

EVALUATE FILTERS ☒

ACTUAL INPUT EDGE 50.0e-3

CALCULATED RISETIME (ns) 83.8e3

CALCULATED OVERSHOOT (%) 12.250

CALCULATED PRESHOOT (%) 1.4063

CALCULATED TOP 266.8e-8

CALCULATED BASE -500e-8

OVERALL SCORE 97.58

☒ R ☒ W ☒ O SAVE

LOAD SAVED SETTINGS

CLOSE

FIG. 8

DIALOG

RESPONSE ADVANCE GROUPDELAY GROUPDELAYOPT SELFTEST

FUZZY RULE BASE

OVERSHOOT L PRESHOOT

	L	M	H
RISETIME L	Ap	AA	CC
M	Am	Bp	Cm
H	Dp	Dm	DD

OVERSHOOT M PRESHOOT

	L	M	H
RISETIME L	Ap	AA	CC
M	Am	Bp	Cm
H	Dp	Dm	DD

OVERSHOOT H PRESHOOT

	L	M	H
RISETIME L	AA	Am	Cm
M	Bp	BB	Dp
H	DD	FF	FF

FUZZY MEMBERSHIP

OVERSHOOT (%)

L	M	H
15	20	25

PRESHOOT (%)

L	M	H
500e-3	2.0	3.0

RISETIME (ns)

L	M	H
76e-3	82e-3	89e-3

RISETIME ARE SPECIFIED FOR

BANDWIDTH 6.0

INPUT EDGE SPEED 35e-3

PRESHOOT MEASUREMENT SETTINGS

HYSTERESIS (%) 250e-3

APERTURE (ns) 1.0

INTERCEPT FACTOR 4.0

OPTIMIZATION STRATEGY

OPTIMIZE FILTERS ☒

TOP SCORES 4

POWER

START 2.0

END 4.0

GRID 200e-3

SCAN 1.0

VERNIER

START 300e-3

END 1.00

GRID 20e-3

SCAN 100e-3

FULL SEARCH ☐

DEBUG INFO ☐

SAVE

LOAD SAVED SETTINGS

CLOSE



1	for n=0 ...N	FOR EACH RESPONSE POINT
2	$R_n = GD_{comprel}(f_n, g_{i-1}) + gd_{spec}_n$	CALCULATE A RESIDUAL
3	for j=0 ...2S-1	FOR EACH COEFFICIENT
4	$J_{n,j} = \frac{\sigma}{\sigma(g_{i-1})_j} GD_{comprel}(f_n, g_{i-1})$	CALCULATE AN ELEMENT OF THE JACOBIAN MATRIX
5	$H = J^T \cdot W \cdot J$	CALCULATE THE APROXIMATE HESSIAN MATRIX
6	for j=0 ...S2-1	GENERATE A MATRIX WHOSE DIAGONAL IS IDENTICAL TO THE HESSIAN MATRIX AND IS ZERO ELSEWHERE
7	$D_{jj} = H_{jj}$	
8	$\Delta P = (H + \lambda \cdot D)^{-1} \cdot J^T \cdot W \cdot R$	CALCULATE THE CHANGE TO THE COEFFICIENT VALUES
9	$g_i = g_{i-1} + \Delta P$	APPLY THE CHANGE TO THE COEFFICIENTS
10	$mse_i = \frac{1}{N+1} \cdot \sum_n (gd_{spec}_n + GD_{comprel}(f_n, g_{i-1}))^2$	CALCULATE THE NEW MEAN SQUARED ERROR
11	true $mse_i > mse_{i-1}$ false	DID THE MEAN SQUARED ERROR INCREASE ?
12	$\lambda = \lambda \cdot 10$ FAVOR STEEPEST DESCENT $\lambda = \frac{\lambda}{10}$ FAVOR NETWORK GAUSS CONVERGENCE	

FIG. 9

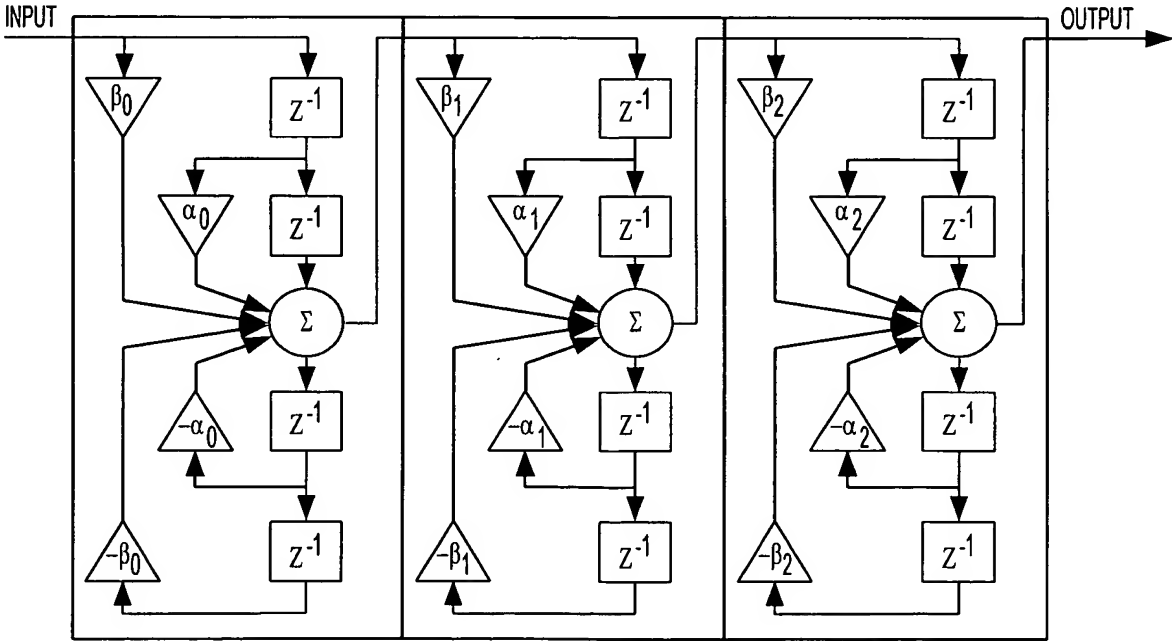


FIG. 10



REPLACEMENT DRAWING

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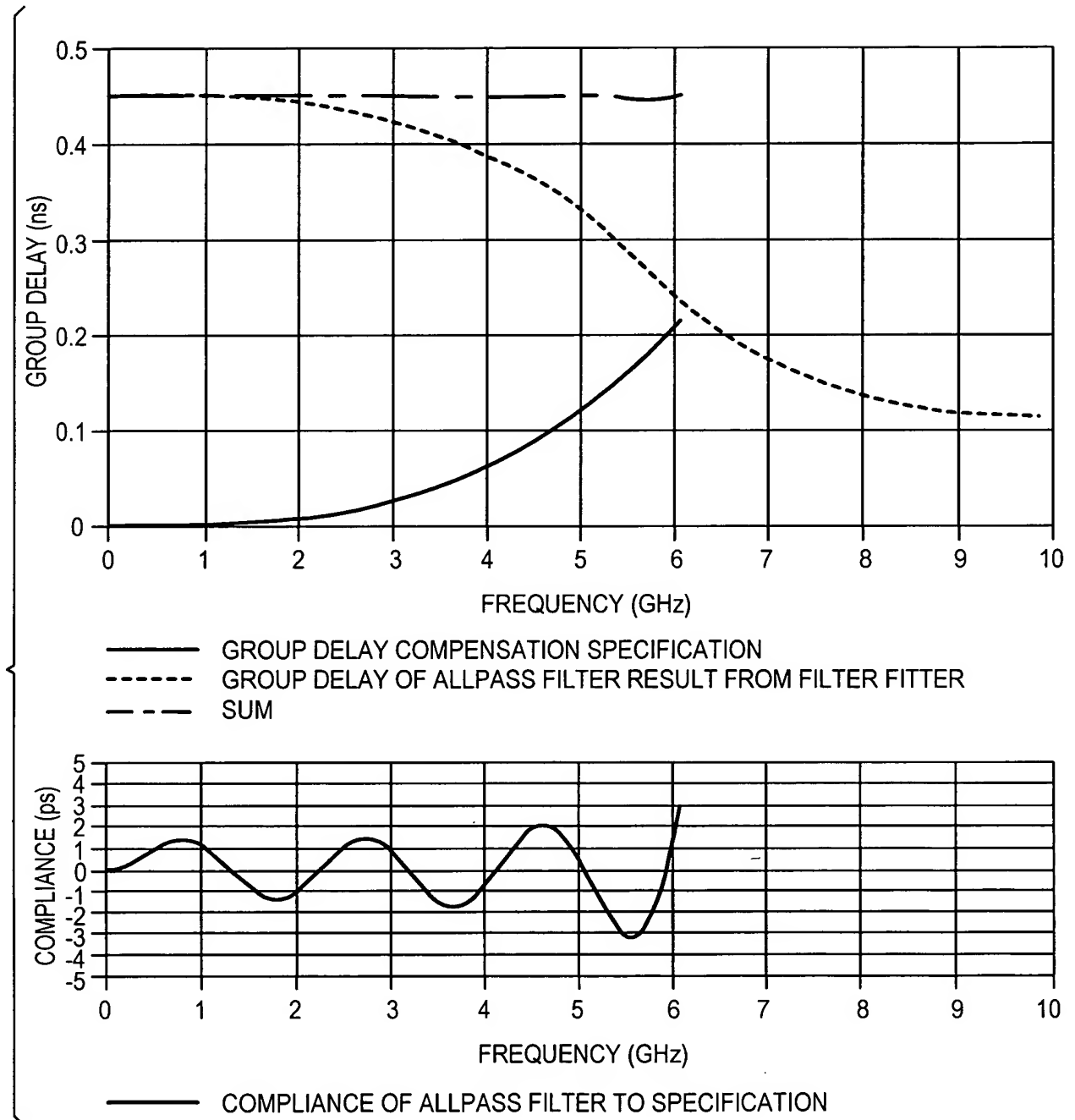


FIG. 11



REPLACEMENT DRAWING

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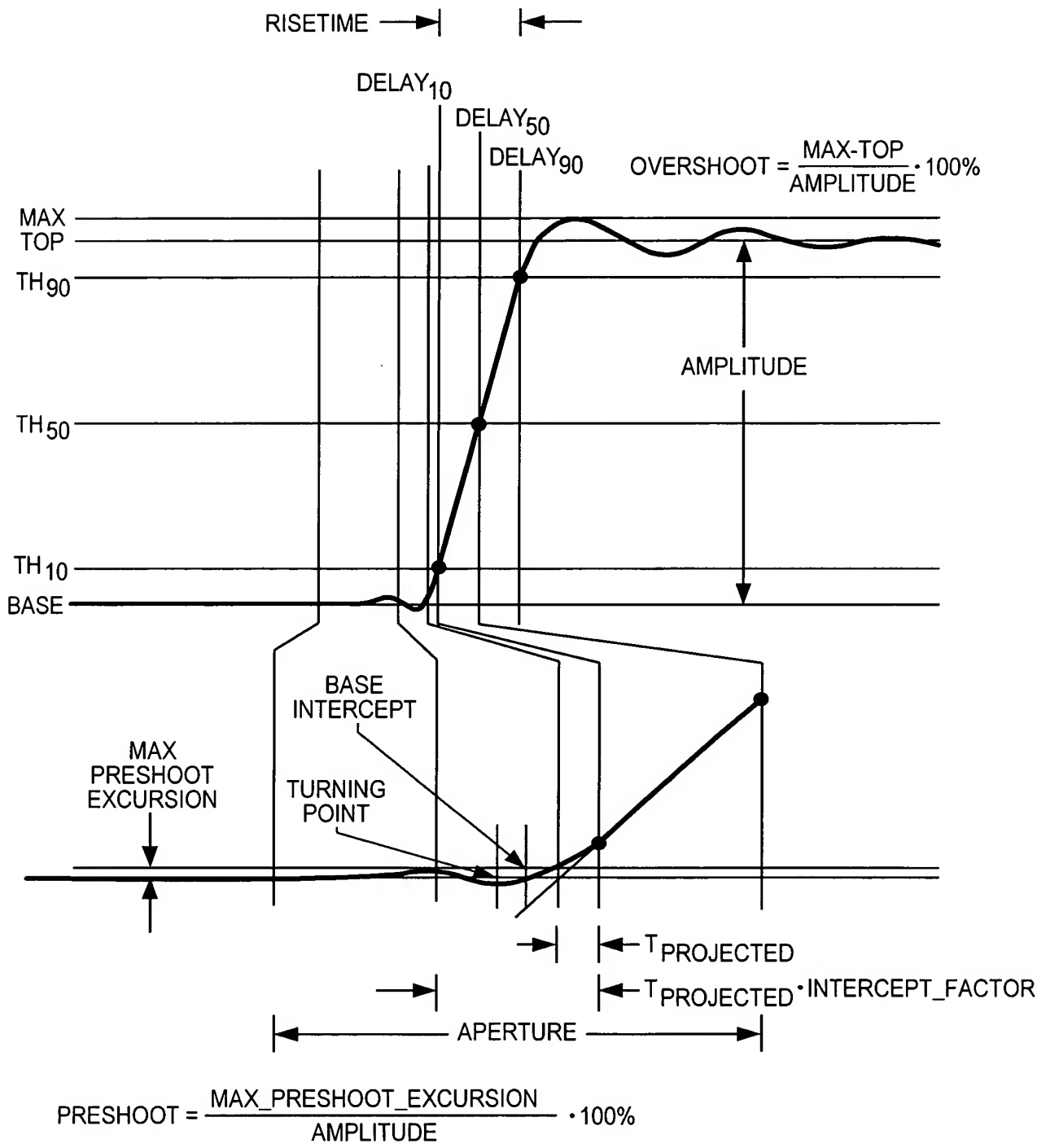


FIG. 12

REPLACEMENT DRAWING

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FIG. 13

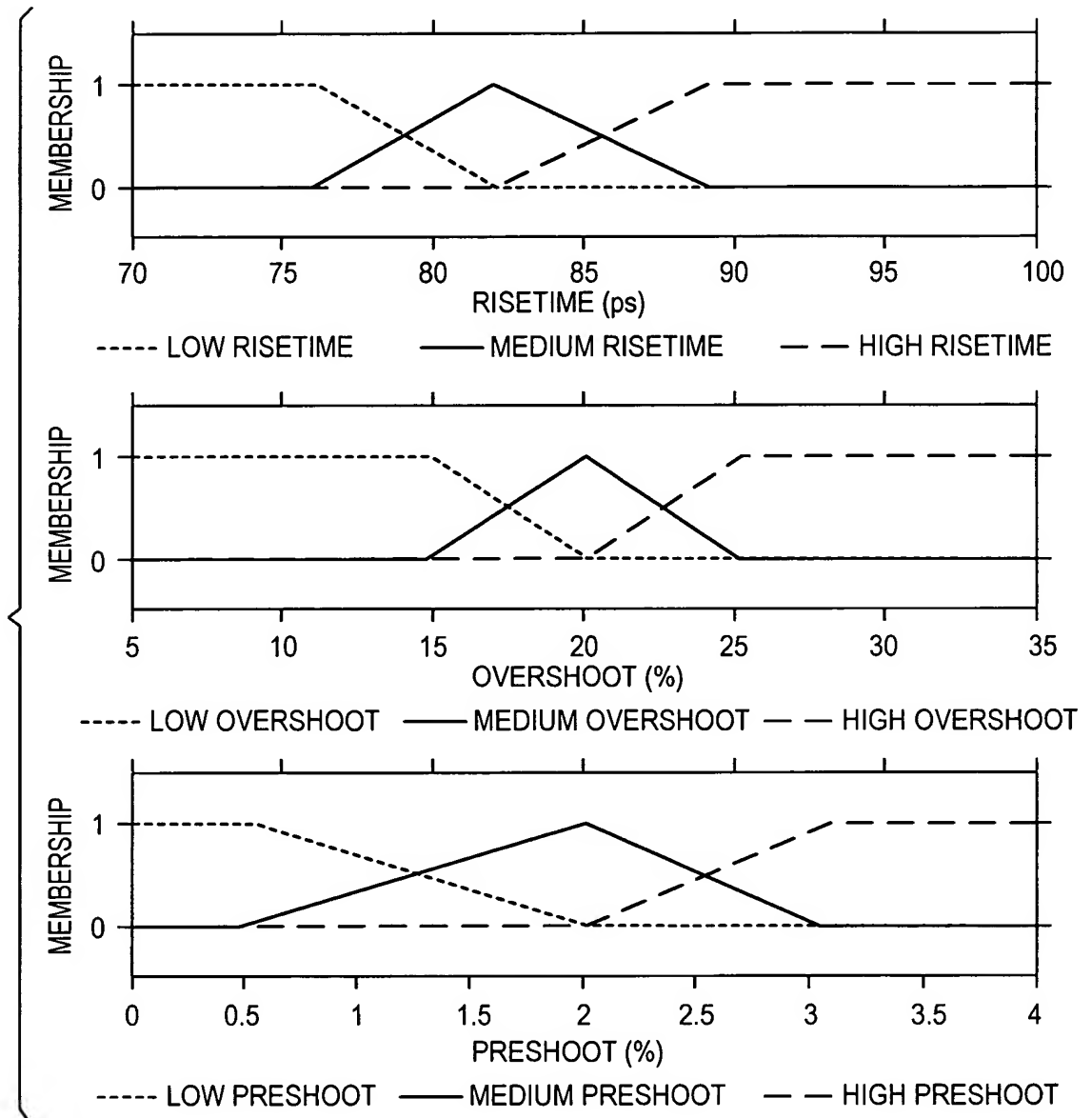
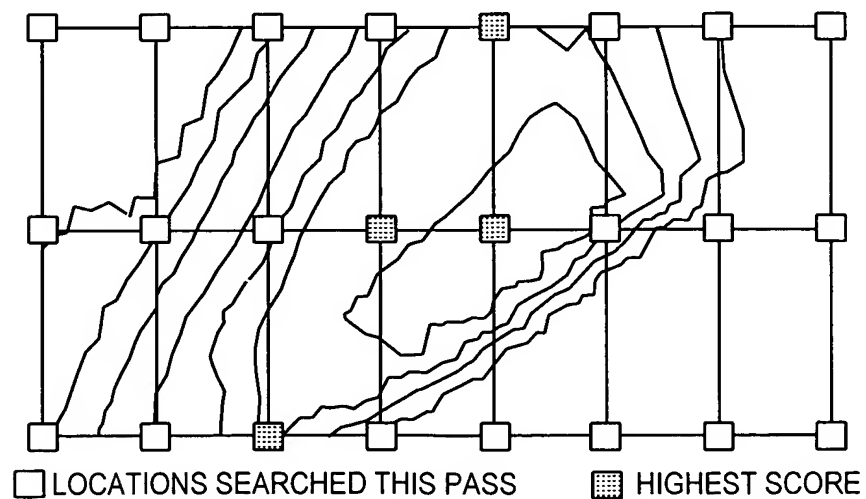


FIG. 14





REPLACEMENT DRAWING

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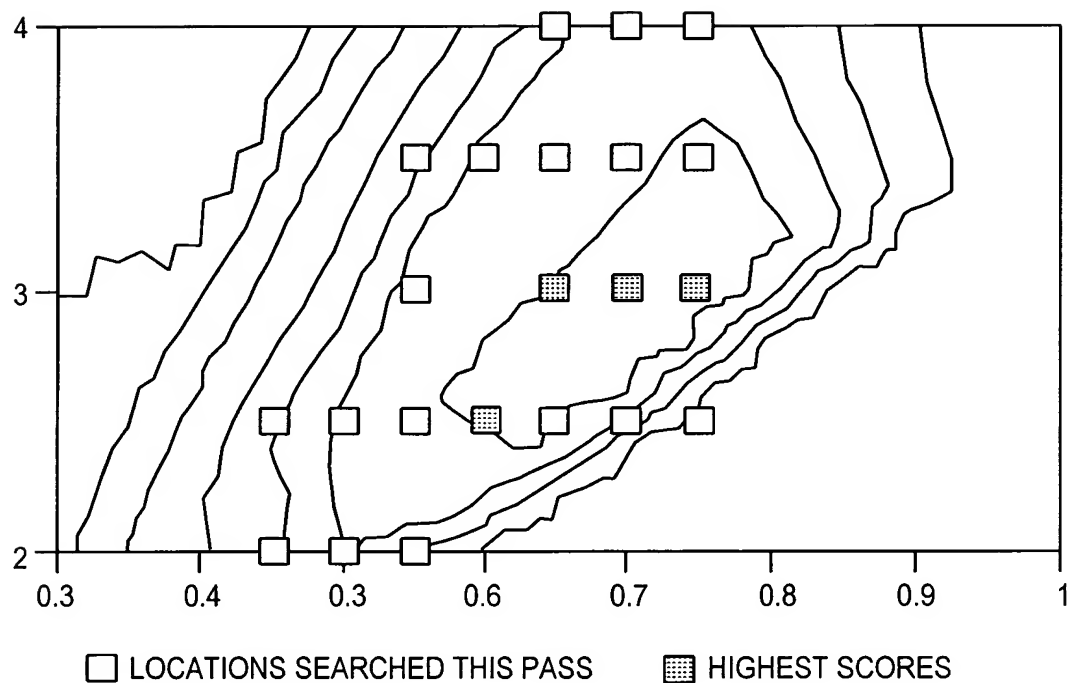


FIG. 15

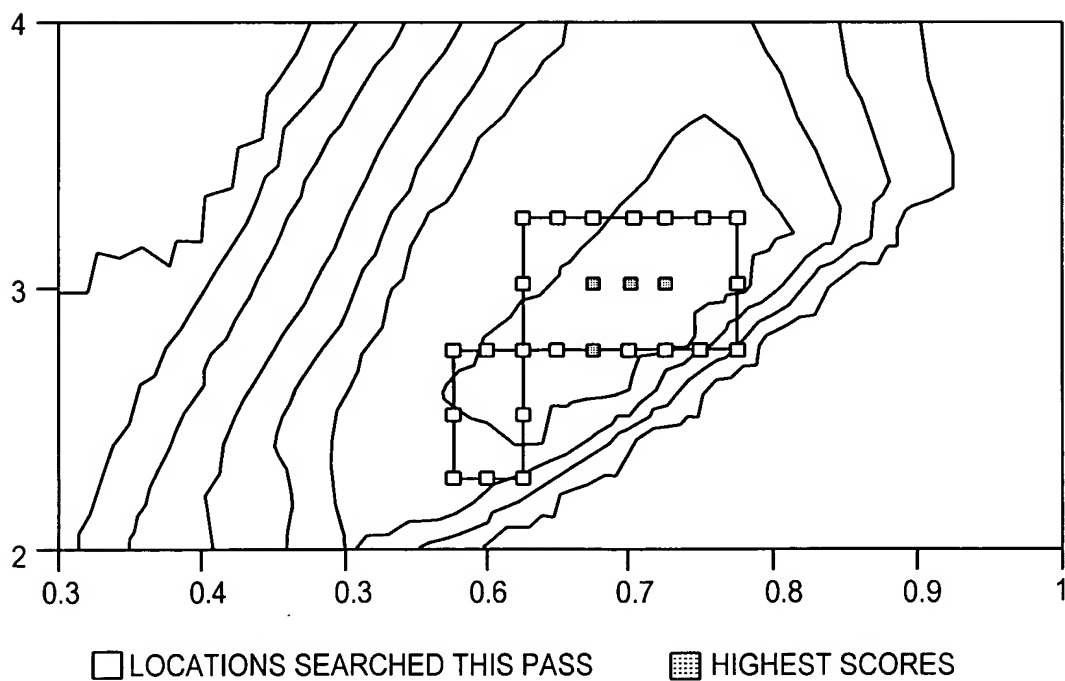


FIG. 16



REPLACEMENT DRAWING

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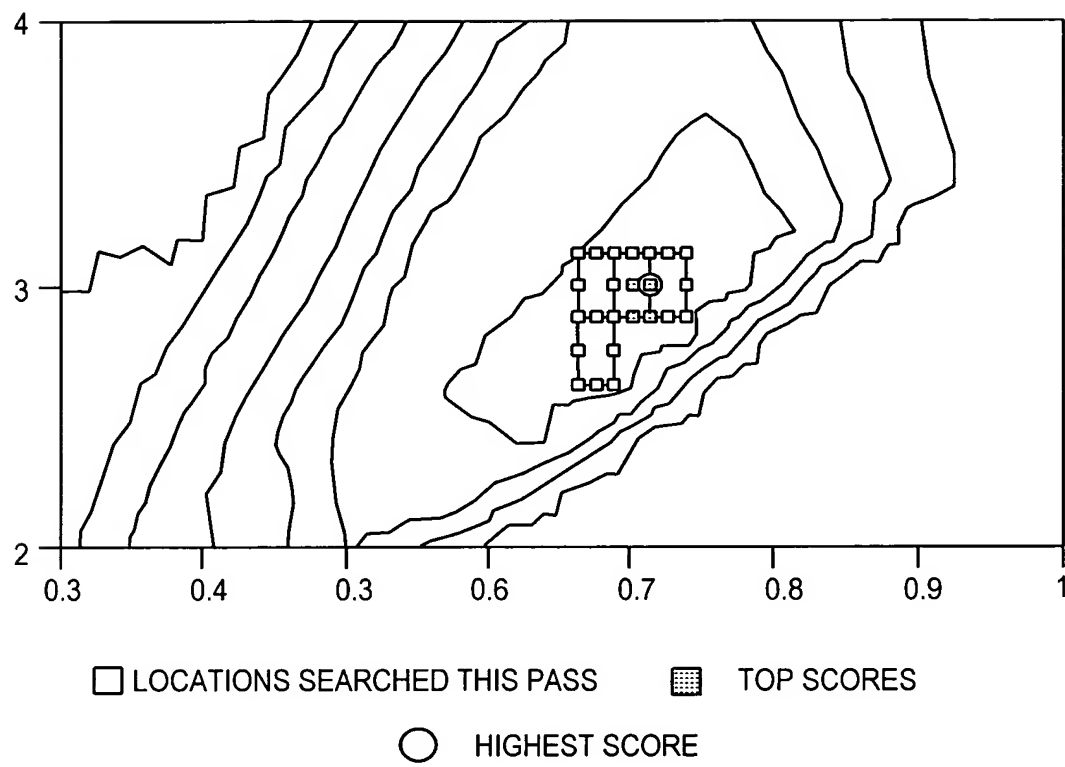


FIG. 17



REPLACEMENT DRAWING

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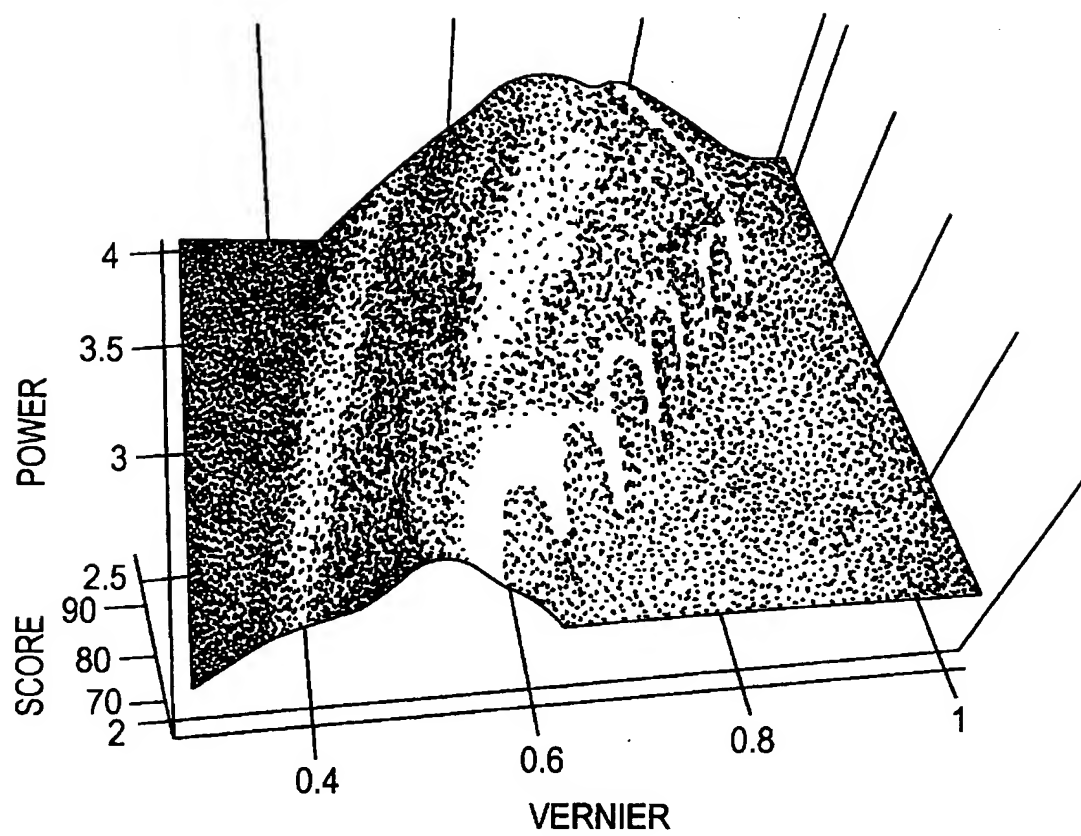


FIG. 18

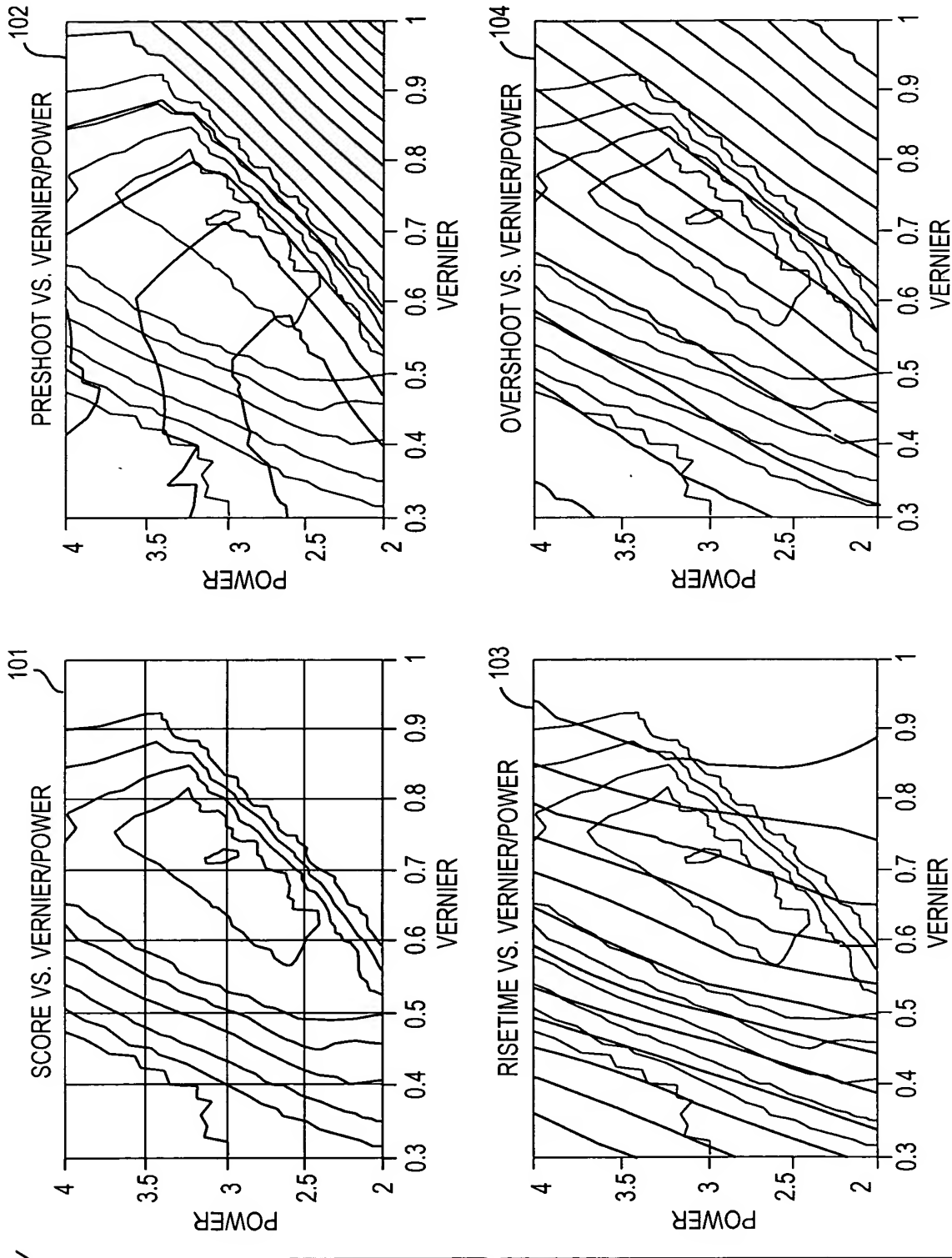


FIG. 19



FIG. 20

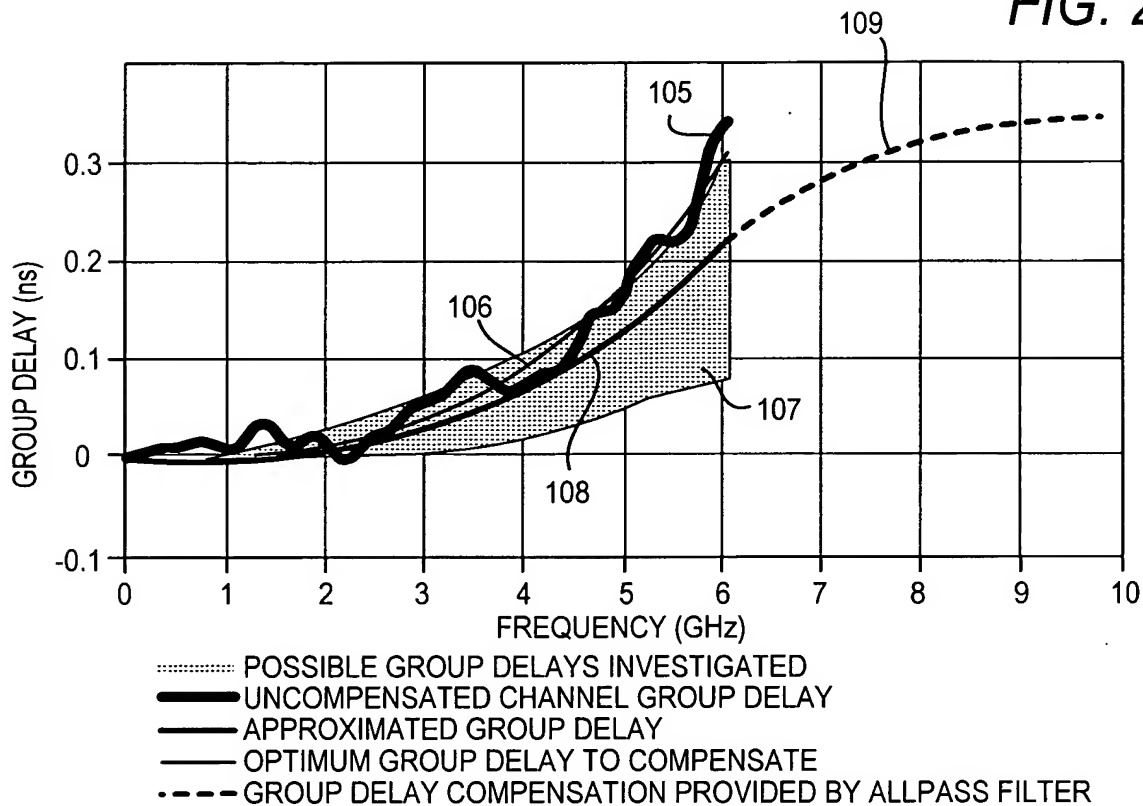


FIG. 21

